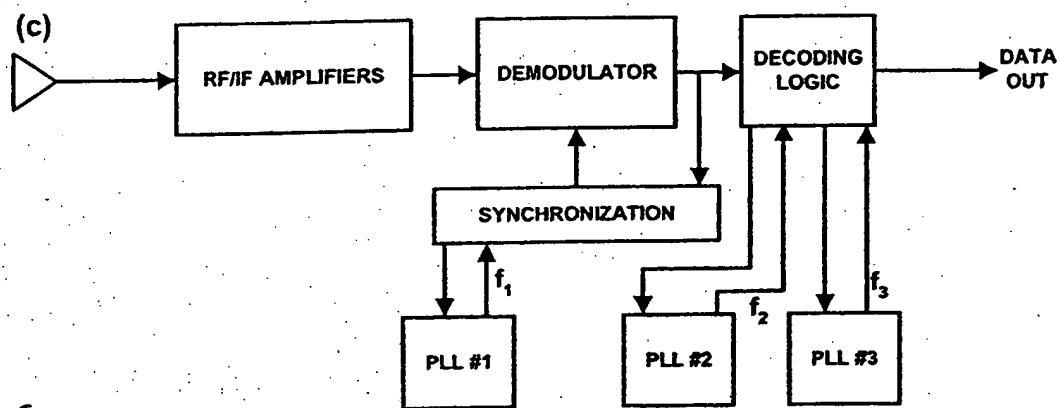
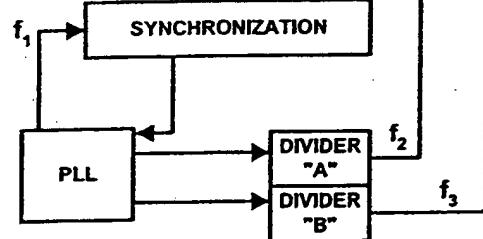
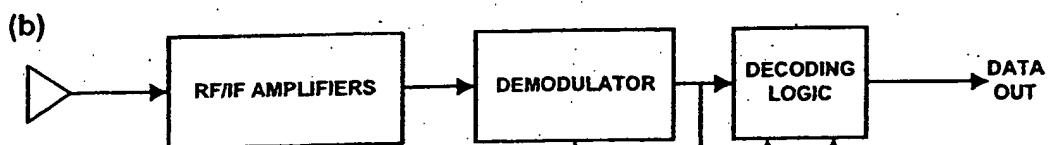
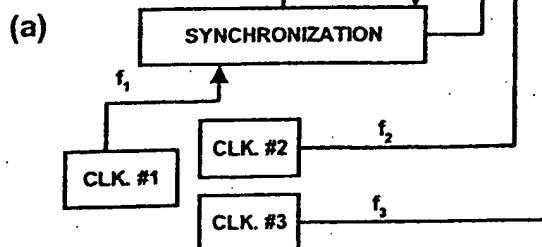
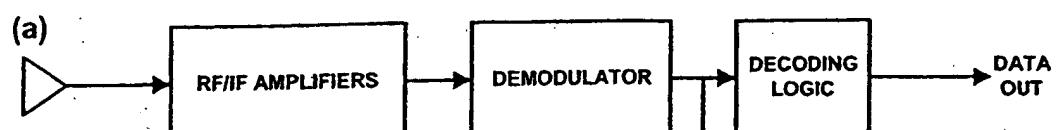




1/8



f_1 = RF/IF carrier
 f_2 = Bit rate
 f_3 = Frame rate

Fig. 1 [Prior Art]

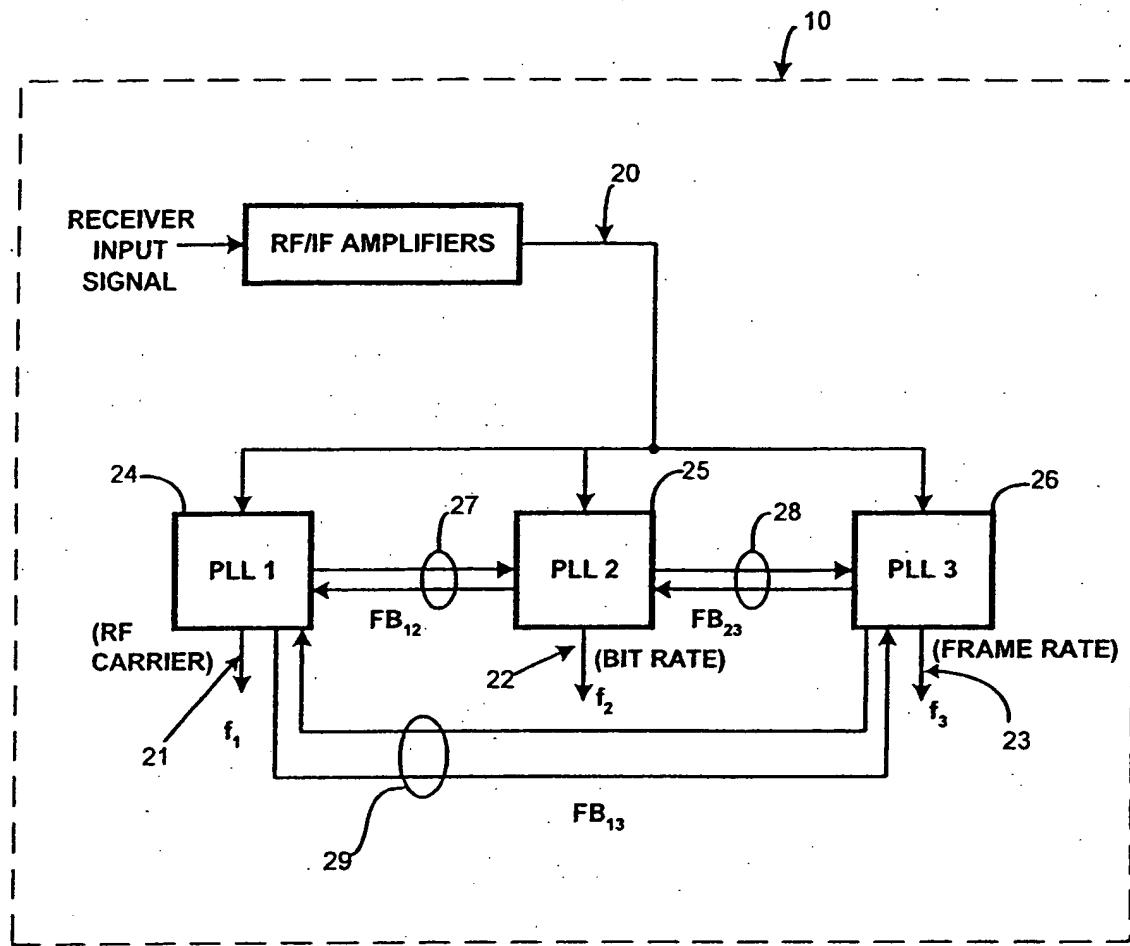


Fig. 2

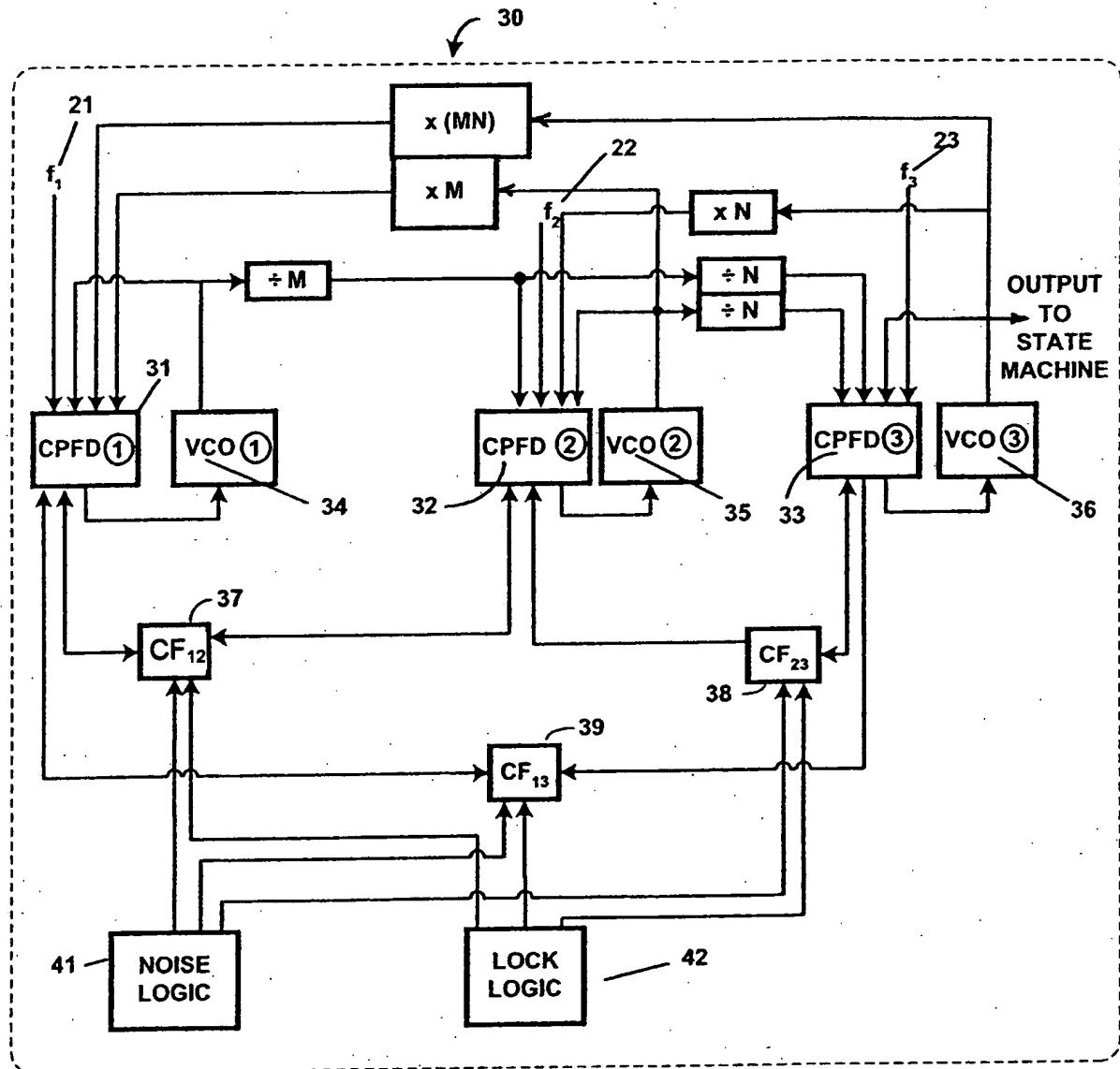
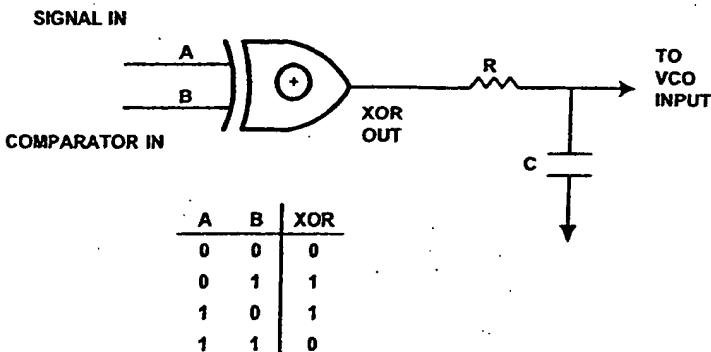
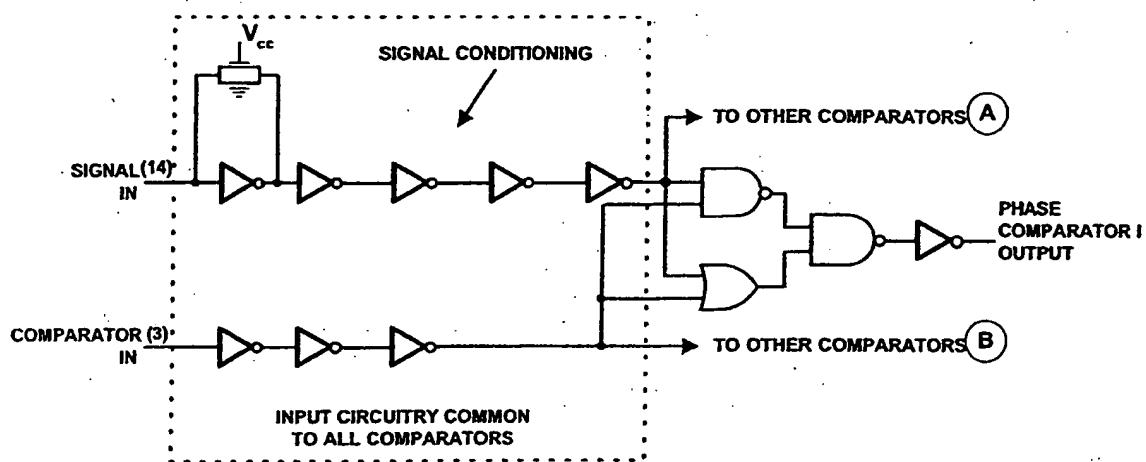


Fig. 3

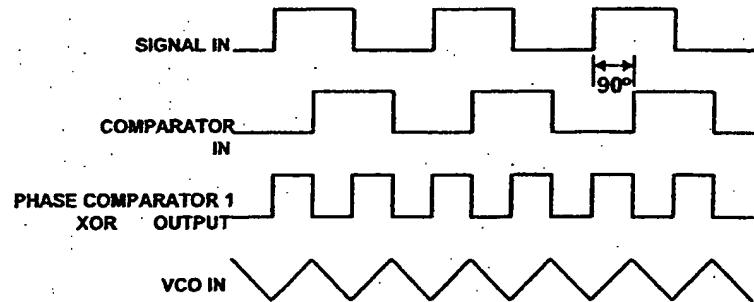
4/8



(A) BASIC XOR PHASE COMPARATOR

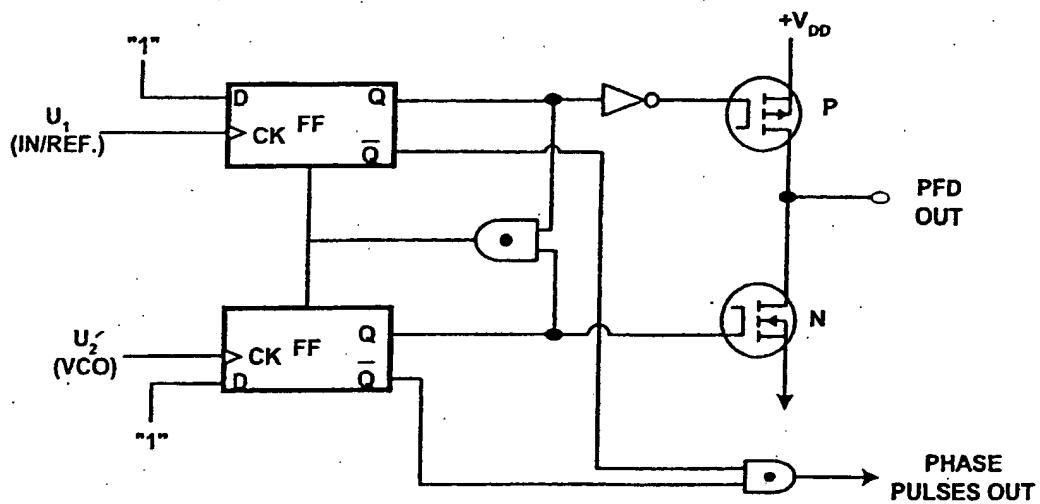


(B) DETAILED ON-CHIP IC CIRCUITRY IN 74HC4046

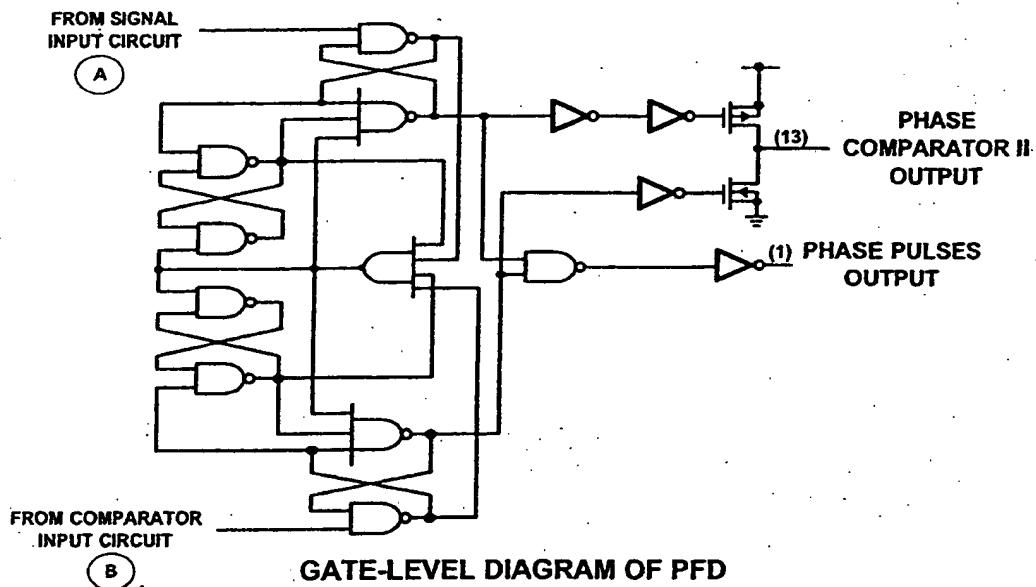


(C) TYPICAL XOR DETECTOR WAVEFORMS

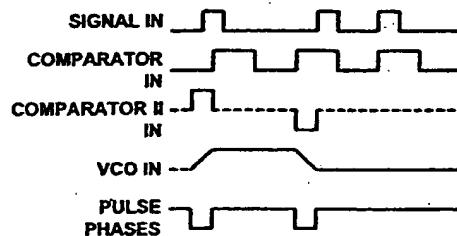
Fig. 4 (Prior Art)



HIGH-LEVEL DIAGRAM OF PFD (existing art)



GATE-LEVEL DIAGRAM OF PFD



TIMING AND WAVEFORMS OF PFD (existing art)

Fig. 4 cont. (Prior Art)

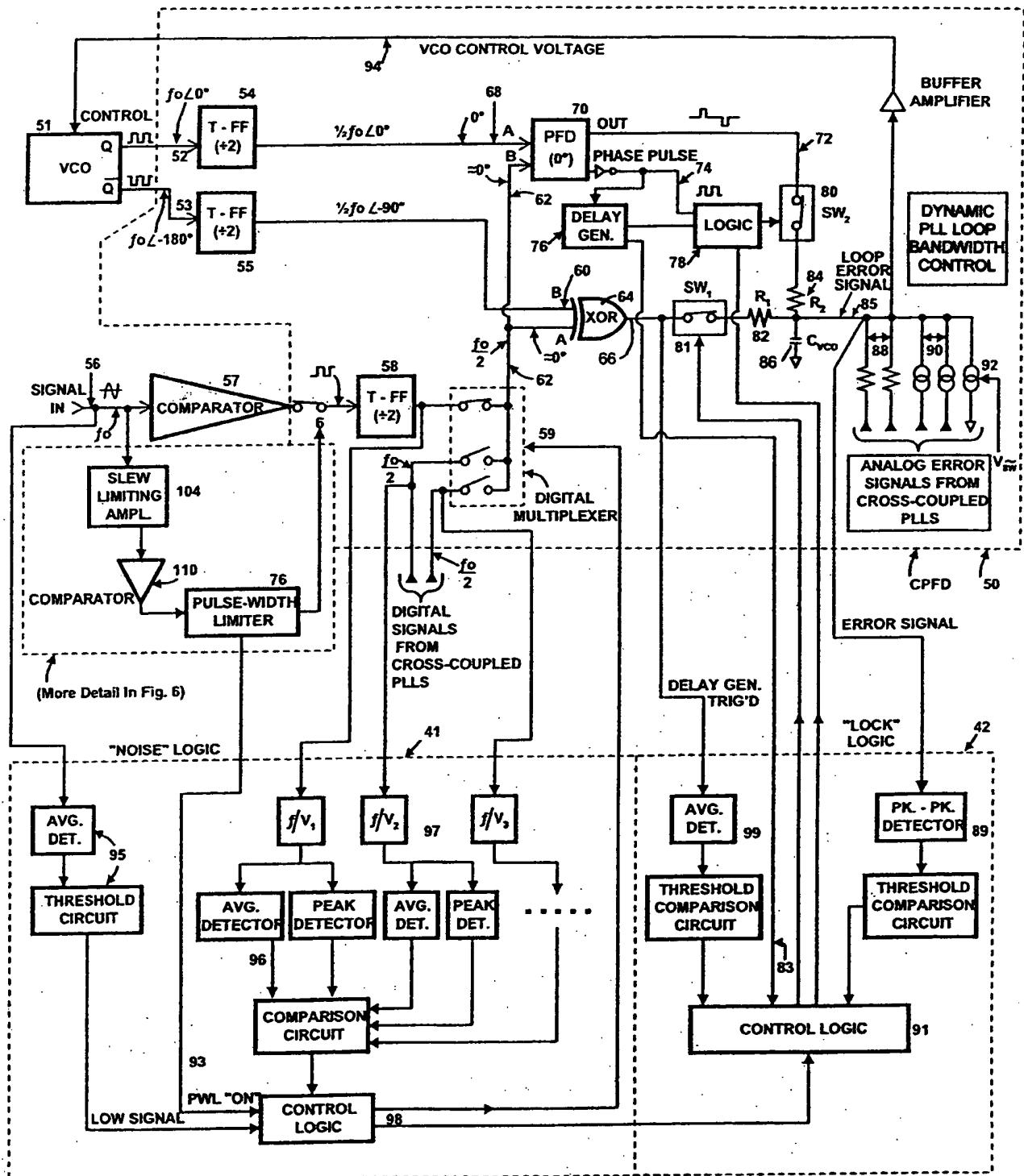


Fig. 5

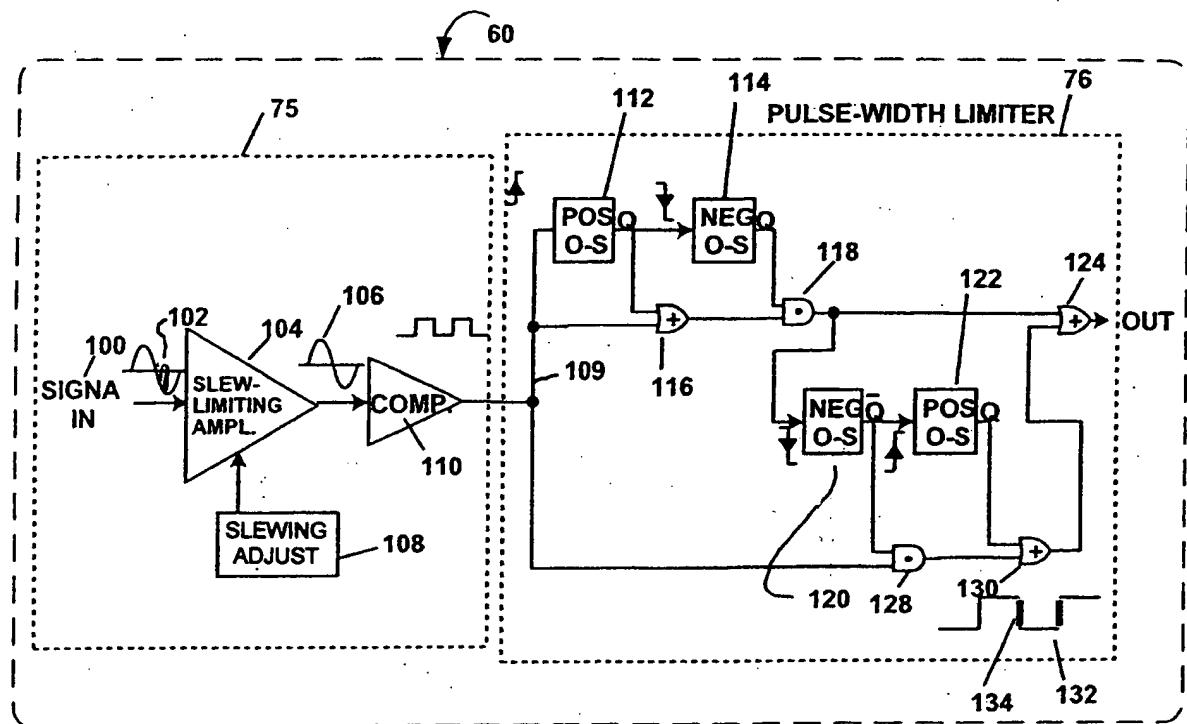


Fig. 6

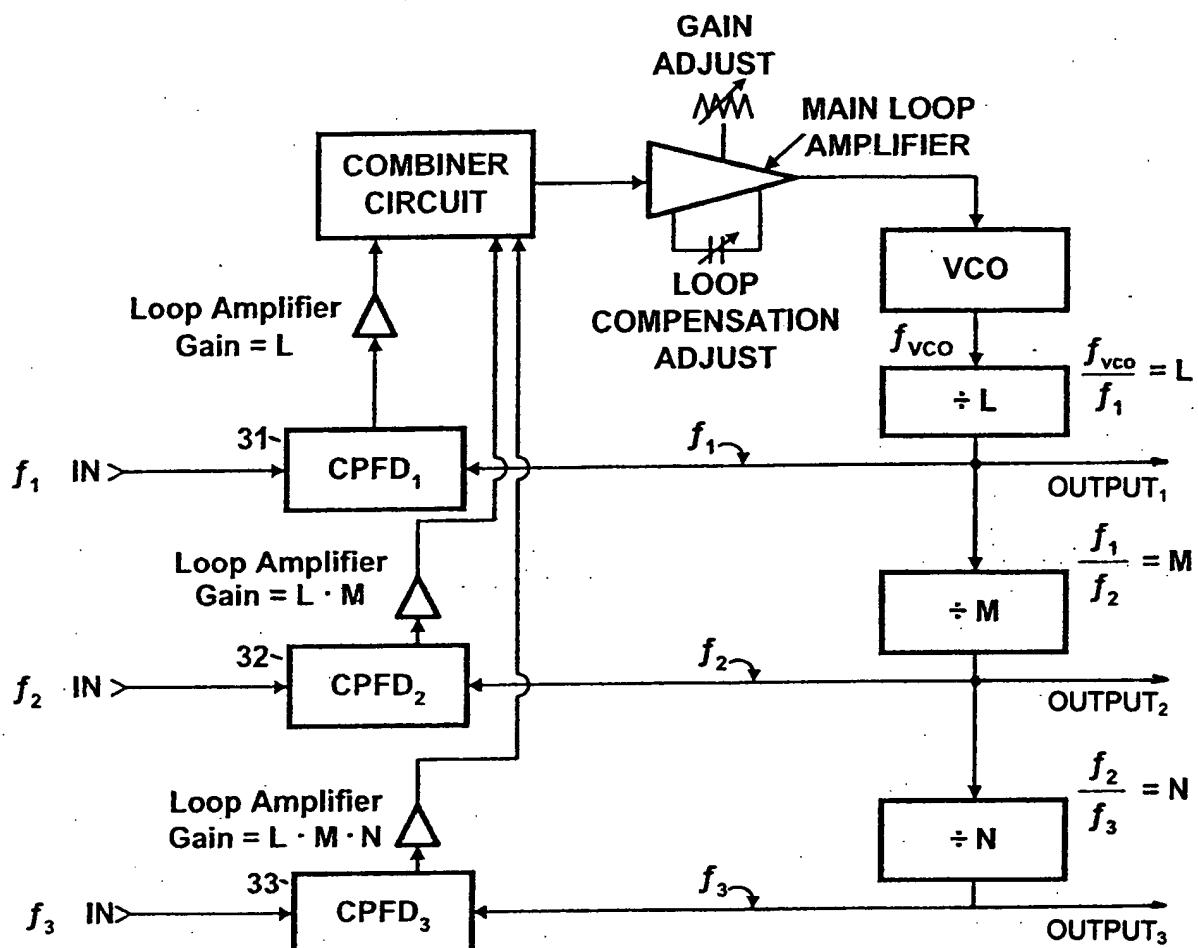


Fig. 7